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(54) **CHANGING FREQUENCY OF A VIRTUAL PROGRAMMABLE INTERRUPT TIMER IN VIRTUAL MACHINES TO CONTROL VIRTUAL TIME**

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(57) **ABSTRACT**

A catch-up mode that runs a virtual programmable interrupt timer faster than a nominal rate to prevent time loss in a virtual machine can be implemented. If time loss is determined, a catch-up mode can be initiated to cause increased firings, beyond a nominal rate, of the programmable interrupt timer to adjust the clock of the virtual machine to the clock of the host system. The virtual programmable interrupt timer can also be readjusted to a predetermined nominal rate when the time loss in the guest operating system is determined approximately within a predetermined tolerance range. The catch-up mode can be monitored to avoid "interrupt storms" on the virtual machine. The virtual programmable interrupt timer can be altered by the guest operating system to accommodate different operating systems.